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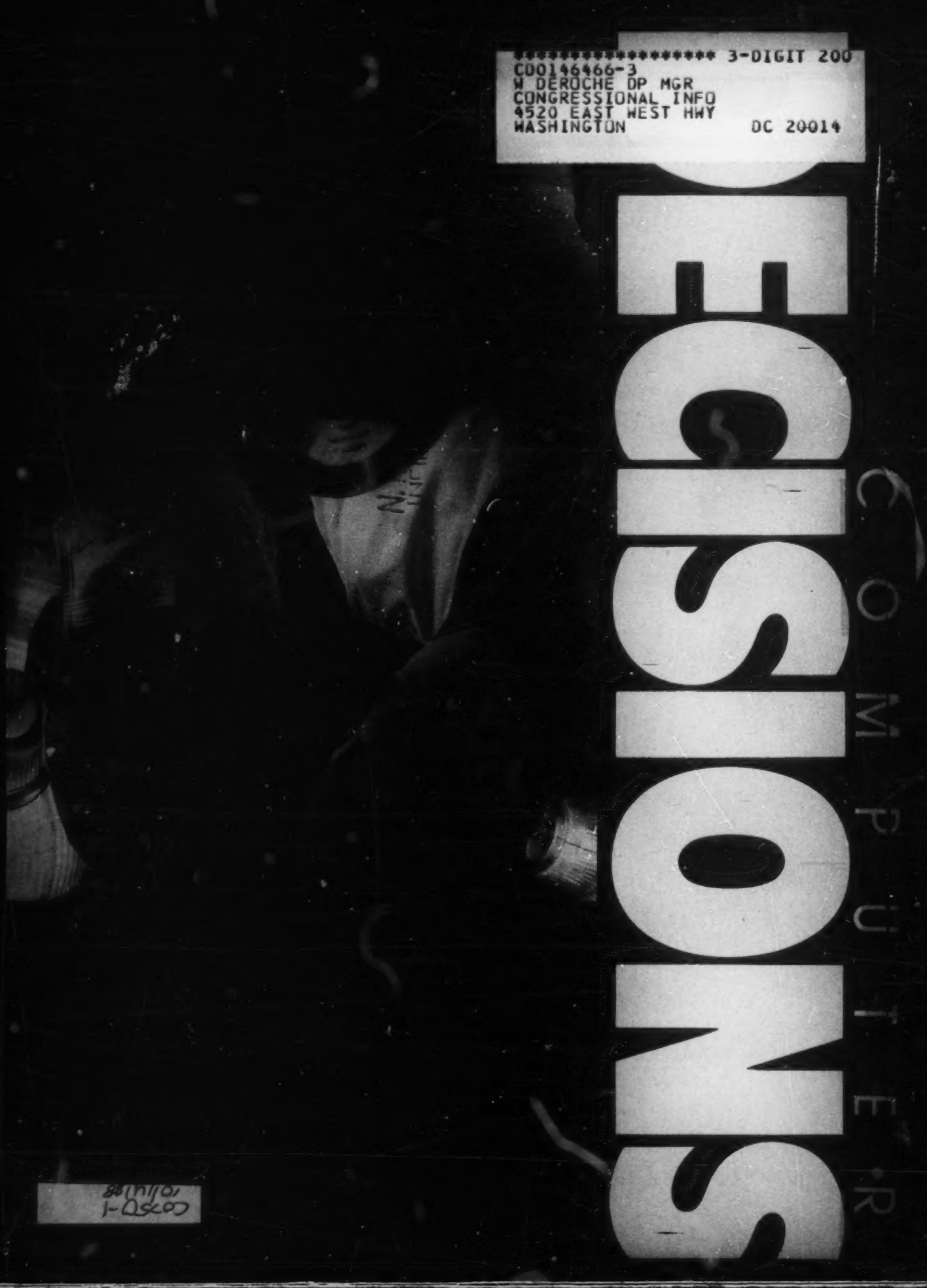

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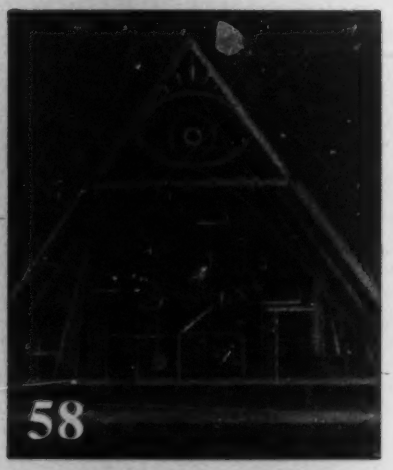

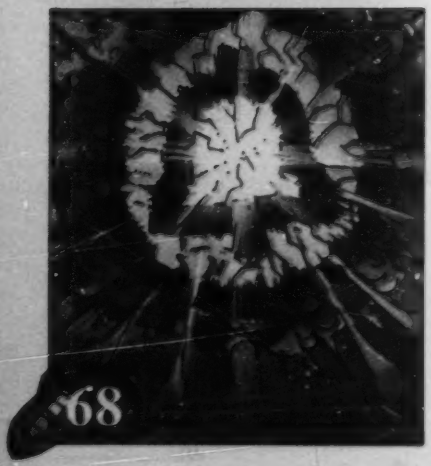

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EDITOR'S MESSAGE

Hospital, Heal Thyself

It's been a little while since the major insurance companies and the federal government—the latter via Medicare/Medicaid rate adjustments—delivered an ultimatum to the nation's health care complex. It is, in effect, the title of this piece.

How have the hospitals responded? Contributing Writer Patrick Flanagan's effort beginning on page 43 of this issue emphatically confirms that things are not going all that well. The treatment of more than half of all U.S. hospital patients currently represents a net loss to the institutions treating them. Further, about one out of every 10 hospitals currently in existence is expected to close its doors for financial reasons within five years.

Almost miraculously, there has not yet been an accompanying downturn of the same magnitude in the quality of medical care available to the average American. However, it's clear this won't go on forever without a massive transfusion of modern business methods. One auditing firm told Flanagan it finds a mistake on nine out of every 10 hospital bills over $5,000 it reviews. For information managers who want to make a mark, this represents a golden opportunity. Golden in the true sense, Flanagan reports, because hospital managers now realize they must bid for and win I/S talent from the most lucrative corporate environments.

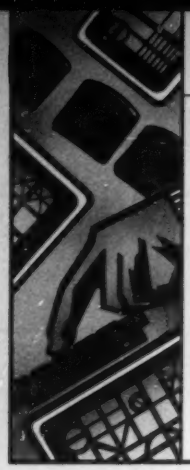
Uncle Dougal knew years ago that the real risks of hospital procedure lay in the presentation of the bill. Once, as he went under to have his gall bladder excised, he told his doctors that as long as they were going to be in the neighborhood, they should have a look at his liver—a center of personal concern for good reason and the subject of his first query later when the anesthesia wore off.

"You have the liver of a 21-year-old," the surgeon said, sensing the need for ultimate reassurance.

Struggling painfully to his elbows, Uncle Dougal fixed him with a baleful glare. "You hopeless quack," he said, "I refuse to pay for any unauthorized transplants."

Robin Nelson

Cover Photograph:
Kim Steele
(Photo taken at the New York Eye & Ear Hospital. Special thanks to Stephen L. Bosniak, M.D.)



TECHNOLOGY TRENDS/Manufacturing

AS/400: PLANT CONTROL OPTION

Barbara Francett

The growing tendency at manufacturing companies to decentralize plants and operations has made the midrange machine a natural, at the expense of the mainframe. Digital Equipment Corp. has capitalized most on this trend. Now there's a new option that could shift the preference in plant control systems: IBM's Application System/400.

The six-model AS/400 line sports features that might lure more manufacturing business. These features include an enhanced relational database management system, as well as connectivity capabilities across the line—which is lacking in IBM's System/3X minicomputers.

For manufacturing control applications, IBM's System/3X line has competed most directly with DEC's VAX and MicroVAX machines and Hewlett-Packard Co.'s HP 3000 computers. DEC currently holds a 12 percent lead over IBM as the preferred midrange supplier, according to a recent survey of 154 manufacturing companies by the Sierra Group, Tempe, AZ-based market researchers (see chart). The Sierra Group determines preferred suppliers by the number of vendor mentions by respondents, rather than the number of systems installed. A year ago, IBM held an 8.5 percent lead over DEC, according to a study the group conducted in 1987.

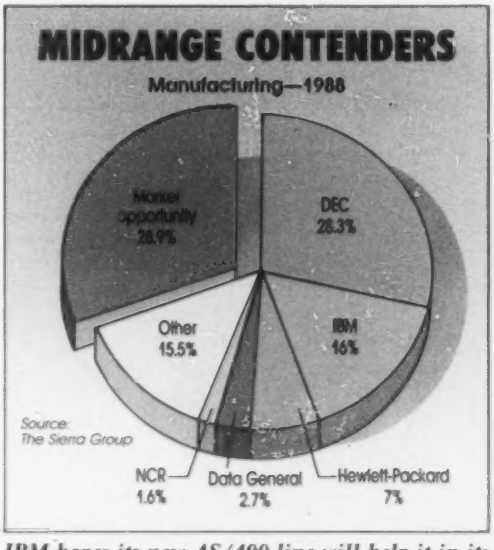
The Sierra Group's findings indicate that the midrange market at manufacturing concerns is far from saturated. Nearly 30 percent of manufacturing sites surveyed in this year's study have no midrange system at all, a vacuum all contenders are racing to fill. And with the AS/400, IBM can close a gap that its 937X line failed to fill, says Nancy Kirk, the Sierra Group's director of industry research. Kirk says the most immediate impact the AS/400 will have on the competitive race is to slow most midrange purchases while users assess IBM's new offerings.

Software vendors hoping to cash in on the AS/400's acceptance as a manufacturing machine give IBM's new line high marks. "The AS/400 offers a dramatic improvement in price/performance that will make it easier for manufacturers to cost justify the systems they need to stay competitive," says Roger Covey, president of System Software Associates Inc. (Chicago), maker of Business Planning and Control System software for manufacturing resource planning. Covey notes that IBM's high-end AS/400 models, the B50 and B60, provide a simple solution for System/36 and System/38 users that need more power and capacity. Those two models offer up to twice the power and capacity provided by the System/38.

While the high-end models will offer System/3X users an alternative to a mainframe investment, Covey contends, the low-end B10, B20, B30, and B40 models will appeal to new customers. He adds that manufacturing customers will use AS/400's greater connectivity and flexibility as a path to computer-integrated manufacturing. SSA's AS/400 version of its MRP software is available now at prices ranging from $4,000 to $6,000 per module for low-end AS/400 models and $20,000 to $30,000 per module for high-end models.

Another product that may gain from AS/400 acceptance is Prism, an MRP series from Marcam (Needham, MA). John Campbell, executive vice president, says the biggest advantage the AS/400 offers is a rich library of applications. "Manufacturers are looking for packaged solutions," he asserts. "With the AS/400, users can pick a standard and run it from very small to very large plants." Marcam sells its Prism/AS modules for $14,000 to $45,000.

John Stahler, data processing manager at Duracell Corp. in Lancaster, SC, currently uses System/38s as base machines, and he's running out of power on them. The AS/400's addition of Structured Query Language to the integrated relational DBMS will help him a lot, he says. But connectivity remains a question in Stahler's view. "Most manufacturers have a number of machines from different vendors," he notes. "How do you tie them together? That's still up in the air. We haven't seen all the AS/400 can do." D



IBM hopes its new AS/400 line will help it in its tussle with DEC for a larger share of the manufacturing market for midrange systems, a third of which is up for grabs.

MEGABUCKS AND MEGADEALS

The byword for software and services vendors is growth—through acquisition, greater sales, and greater importance to corporate America.

by John Soat

Christopher Carleton has a simple formula for tracking the health of the software and services industry. The communications director for Adapso, the industry's trade association, says that in hard times, "membership dues are the first to go." Carleton knew early on that 1987 was going to be a good year. The obvious tip-off: "Companies kept up their memberships."

For the four quarters ending March 31, 1988, the combined revenues of the top 30 vendors of software and the top 30 of computer services reached $17.84 billion, a 22 percent increase over the comparable period a year earlier. For the 30 leading suppliers of software for midrange and large systems, revenues totaled $4.15 billion, for a growth rate of 31 percent over the prior year. The top five software firms grossed more than $1.6 billion. Their average growth rate of 44.4 percent was fueled by phenomenal customer demand for products from Oracle Corp., and big acquisitions made by Computer Associates International Inc.

Computer services companies reported respectable increases as well. Gross revenues for the top 30 providers weighed in at more than $13.68 billion, for a healthy 19 percent increase over 1987. Anacomp Inc. led the software and services pack in growth on the strength of a 279 percent increase, propelling the company from 23rd to 10th on the DECISIONS list of services vendors. And on the heels of several acquisitions, Atlanta-based First Financial Management Corp. grew 179 percent to $233.6 million, upping its rank from 26th to 14th on the services list.

Oracle's impressive climb from number 12 to number 4 on the software list signifies a ringing endorsement for relational database technology. "Applications are aging," says Peter Tierney, marketing vice president at Oracle, "and there is a demand for new technology."

Unix is just such a technology. Aided by a 200 percent increase in Unix sales, Relational Technology Inc. rose to 16th place on the software lineup, from 22nd place last year. Informix Software Inc., another Unix vendor, saw revenues in the first calendar quarter of 1988 jump to $25 million, a 98 percent increase over first quarter 1987 sales. "Unix is mushrooming," says Stephen Hill, director of product marketing.

While there are additional information technology companies with software and services revenues large enough to qualify for top rankings (IBM is an obvious one), companies are categorized for purposes of the four DECISIONS market surveys (micros, large systems and peripherals, software and services, and communications) by the market segment from which they garner their greatest information systems and services revenues. Their rank within that category is then based on their total information systems and services revenues.

One significant trend reflected in the financial results posted by software and services vendors is that merger and acquisition activity continues its unabated pace. Another is that the much-predicted takeoff in professional computer services is well underway. A third is that the two segments of the industry are moving closer together.

The heady pace of mergers and acquisitions brought instant growth to many companies. Often the motivation is for a ready-made product line. For instance, when Informix merged with Innovative Software Inc. this past February, it was primarily because Informix wanted a tried and true line of office automation soft-

Ted Horan

Computer Associates CEO Charles Wang

'More acquisitions doesn't necessarily mean fewer companies in the market.'

ware. In discussing the merger, Informix's Hill strikes a note appropriate to the merger and acquisition spirit of the whole industry: "We could have developed [the software] ourselves," he says, "but it would have taken too long."

Richard Dek/Picture Group

George Shaheen of Arthur Andersen

'MIS has not been viewed as a great success by [corporate] management.'

A lot of companies seem to have been in a hurry. According to Broadview Associates, a Fort Lee, NJ, investment banker for the information technology industry, the total number of merger and acquisition transactions in the software and services industry in 1987 was 358, up 17 percent from 1986. The value of those deals was a whopping $4.9 billion. Although 70 percent of the 1987 transactions involved small to medium-sized companies, with a median transaction size of $4 million, the list of megadeals is indeed long. Topping that list: the $830 million purchase of Uccel Corp. by Computer Associates.

Recent events indicate that Computer Associates' acquisition appetite has yet to be satiated. In June, Computer Associates went after Management Science America Inc., the third-largest company in the DECISIONS software survey. But the MSA board of directors rejected the proposal, and Computer Associates withdrew its offer.

The merger and acquisition fervor intensified in the first half of this year: The value of software and services transactions in that six-month period surpassed the total value for all of 1987. According to the midyear Adapso/Broadview Associates index, the 190 deals cut in the first six months of 1988 had a total value of $5.4 billion.

All these mergers and acquisitions don't necessarily portend a much-anticipated industry consolidation, however. Charles Wang, chief executive officer of Computer Associates, points out that for every software company that is acquired, several more are started. "More acquisitions doesn't necessarily mean fewer companies in the market," he says. Richard Dorfman of Broadview Associates sees "a lot of concentration, not consolidation," claiming there's equilibrium between mergers and startups.

Still, Computer Associates' most recent stab at another megadeal indicates the temperament of the post-crash market. "The October crash certainly didn't diminish enthusiasm for mergers and acquisitions," says Dorfman. In fact, it may have encouraged them. Dorfman claims that small companies began reconsidering public offerings after the crash, and larger firms took advantage of the unsure market to snap up weak firms.

The weak U.S. dollar made for strong sales to Europe. Mario Morino, chairman of Morino Associates Inc., cites a 79 percent increase in overseas revenues in the last year. Oracle's European revenues grew to a 50 percent share, while Relational Technology saw European sales capture 40 percent of its total revenues.

The weak dollar also led to the acquisition by foreign companies of American concerns, a trend that Broadview's Dorfman refers to as the "globalization" of the software and services market. That the software market has been dominated by American companies hasn't been lost on foreign competitors. Although Adapso's Carleton claims that software is "still an American industry," continued globalization could tip the scales.

Would-be acquirers also showed a rising interest in services firms. According to the Adapso/Broadview index, professional services companies accounted for 21 percent of the deals in the first half of 1988, up from 12 percent in the first half of last year. And new players are suddenly awakening to the growth and profitability of the computer services sector. Just this June, Nynex Corp. (New York), a regional Bell holding company, moved into the market with a definitive agreement to acquire the professional services and software products businesses of AGS Computers Inc.

The Big Eight accounting firms continue to gain ground in the services race. Riding a 32 percent growth that boosted services revenues to more than $838 million, Arthur Andersen & Co. became the fifth-largest services vendor. From the number 22 post in last year's survey, Arthur Young & Co. climbed to number 16 on a 57 percent growth in revenues.

For services vendors, competition in the commercial arena may become even hotter in the wake of the procurement scandal that has rocked the U.S. Department of Defense. As the contract approval process in the government slows down, the government's traditional services suppliers, such as TRW Inc., may turn more attention to commercial work.

Why the heightened interest in computer services? "More decentralization of business," answers Patrick Gross, chairman of American Management Systems Inc., "which makes for a greater mix of internal staff and outside services." John P. Imlay Jr., chairman of MSA, sees it as a focusing of demand. "Corporations are no

'88	'87	Large-System Software	'88 I/S Revenues (000)	'87 I/S Revenues (000)	Percent Growth	Total '88 Revenues (000)	Total '88 Profits (000)	FY End
1	1	Computer Associates Int'l. Inc. *(Garden City, NY)*	709,109	452,299	57	709,109	101,828	Mar.
2	2	Dun & Bradstreet Corp. *(New York)*	*270,000	*270,000	NA	3,359,164	392,999	Dec.
3	3	Management Science America Inc. *(Atlanta)*	245,547	210,541	17	245,547	(5,509)	Dec.
4	12	Oracle Corp. *(Belmont, CA)*	228,317	101,709	124	228,317	31,420	May
5	5	Cullinet Software Inc. *(Westwood, MA)*	216,653	174,891	24	216,653	(47,024)	Apr.
6	4	Sterling Software Inc. *(Dallas)*	201,161	196,673	2	201,161	6,794	Sep.
7	7	AGS Computers Inc. *(Mountainside, NJ)*	197,941	153,128	29	533,286	16,433	Dec.
8	6	Policy Management Systems Corp. *(Columbia, SC)*	188,550	160,025	18	188,550	17,947	Dec.
9	9	Applied Data Research Inc. *(Princeton, NJ)*	*172,900	*132,400	31	172,900	NA	Dec.
10	13	Pansophic Systems Inc. *(Oak Brook, IL)*	149,583	102,222	46	149,583	14,573	Apr.
11	11	SAS Institute Inc. *(Cary, NC)*	*135,300	*102,400	32	135,300	NA	Dec.
12	14	Cincom Systems Inc. *(Cincinnati)*	*132,500	*100,000	33	132,500	NA	Sep.
13	16	Ask Computer Systems Inc. *(Los Altos, CA)*	127,362	93,489	36	127,362	9,333	Jun.
14	10	Triad Systems Corp. *(Sunnyvale, CA)*	122,472	111,981	9	122,472	6,911	Sep.
15	15	Information Builders Inc. *(New York)*	*113,500	*95,000	19	113,500	NA	Dec.
16	22	Relational Technology Inc. *(Alameda, CA)*	*87,400	*46,600	88	87,400	7,500	Jun.
17	18	Compuware Corp. *(Birmingham, MI)*	86,000	62,200	38	86,000	NA	Mar.
18	20	On-Line Software Int'l Inc. *(Fort Lee, NJ)*	84,517	53,434	58	84,517	6,354	May
19	—	Informix Software Inc. *(Menlo Park, CA)*	(R)81,278	(R)41,430	96	81,278	(R)9,201	Dec.
20	17	Comshare Inc. *(Ann Arbor, MI)*	77,085	68,493	13	77,085	1,904	Jun.
21	19	Software AG Systems Inc. *(Reston, VA)*	73,354	66,485	10	73,354	4,553	May
22	—	Cognos Inc. *(Ottawa, Ontario)*	70,369	57,997	21	70,369	2,656	Feb.
23	—	Interleaf Inc. *(Cambridge, MA)*	58,389	37,173	57	58,389	6,980	Mar.
24	23	American Software Inc. *(Atlanta)*	*54,187	*46,727	16	54,187	10,335	Apr.
25	26	Boole & Babbage *(Sunnyvale, CA)*	48,810	37,293	31	48,810	6,355	Sep.
26	21	Intermetrics Inc. *(Cambridge, MA)*	47,363	47,747	-1	47,363	2,173	Feb.
27	24	Hogan Systems Inc. *(Dallas)*	46,705	44,091	6	46,705	2,119	Mar.
28	27	Duquesne Systems Inc. *(Pittsburgh)*	43,686	33,207	32	43,686	9,405	Sep.
29	28	Morino Associates Inc. *(Vienna, VA)*	41,880	31,198	34	41,880	7,883	Jun.
30	29	Goal Systems Int'l. Inc. *(Columbus, OH)*	*40,000	*29,231	37	40,000	NA	Jan.
		Total Large-System Software	**4,151,918**	**3,160,054**	**31**			

'88	'87	Computer Services	'88 I/S Revenues (000)	'87 I/S Revenues (000)	Percent Growth	Total '88 Revenues (000)	Total '88 Profits (000)	FY End
1	1	TRW Inc. *(Cleveland)*	(E)1,960,000	(E)1,625,000	21	6,933,000	259,000	Dec.
2	4	Electronic Data Systems Corp. *(Dallas)*	1,524,200	1,176,700	30	4,518,500	347,600	Dec.
3	2	Automatic Data Processing Inc. *(Roseland, NJ)*	1,511,226	1,347,533	12	1,511,226	161,750	Jun.
4	3	McDonnell Douglas Corp. *(St. Louis)*	1,257,100	1,198,500	5	13,550,500	321,200	Dec.
5	7	Arthur Andersen & Co. *(Chicago)*	*838,400	*635,900	32	2,315,800	NA	Aug.
6	5	Computer Sciences Corp. *(El Segundo, CA)*	810,600	729,200	11	1,152,351	71,351	Mar.
7	6	General Electric Co. *(Fairfield, CT)*	*775,000	*775,000	0	40,515,000	2,915,000	Dec.
8	8	Martin Marietta Corp. *(Bethesda, MD)*	*506,000	*467,400	8	5,165,124	230,650	Dec.
9	9	Emhart Corp. *(Farmington, CT)*	*438,000	*408,896	7	2,454,500	106,500	Dec.
10	23	Anacomp Inc. *(Indianapolis)*	419,577	110,740	279	419,577	41,965	Sep.
11	10	Shared Medical Systems Corp. *(Malvern, PA)*	389,504	384,229	1	389,504	43,002	Dec.
12	12	Boeing Co. *(Seattle)*	*266,300	*300,000	-11	15,355,000	480,000	Dec.
13	11	Sorbus *(Frazer, PA)*	*255,000	*238,000	7	255,000	NA	Dec.
14	26	First Financial Management Corp. *(Atlanta)*	233,659	83,733	179	233,659	15,042	Dec.
15	13	Mtech Corp. *(Dallas)*	*232,100	*198,600	17	232,100	15,400	Dec.
16	22	Arthur Young & Co. *(New York)*	*204,000	(E)*130,000	57	738,000	NA	Oct.
17	17	American Management Systs. Inc. *(Arlington, VA)*	186,286	143,947	29	186,286	7,460	Dec.
18	15	Computer Task Group Inc. *(Buffalo, NY)*	181,114	149,983	21	181,114	5,323	Dec.
19	14	HBO & Co. *(Atlanta)*	178,559	151,030	18	178,559	13,519	Dec.
20	20	Touche Ross & Partners *(Toronto)*	*175,000	*135,000	30	1,750,000	NA	Aug.
21	21	Peat Marwick *(Montvale, NJ)*	175,000	125,000	40	1,600,000	NA	Jun.
22	—	SHL Systemhouse Inc. *(Ottawa, Ontario)*	173,340	116,601	49	173,340	22,262	Aug.
23	19	Systematics Inc. *(Little Rock, AR)*	168,677	135,114	25	168,677	13,674	May
24	24	Price Waterhouse & Co. *(New York)*	*152,000	*100,000	52	845,000	NA	Jun.
25	18	Grumman Corp. *(Bethpage, NY)*	149,395	137,767	8	3,431,080	(1,175)	Dec.
26	16	Intelogic Trace Inc. *(San Antonio, TX)*	130,329	145,250	-10	130,329	2,400	Jul.
27	—	Information Resources Inc. *(Chicago)*	106,471	98,345	8	106,471	(5,708)	Dec.
28	25	CSC Inc. *(Herndon, VA)*	101,966	86,300	18	101,966	13,346	Mar.
29	—	Sungard Data Systems Inc. *(Wayne, PA)*	97,653	75,018	30	97,653	8,915	Dec.
30	—	Fiserv Inc. *(Milwaukee)*	88,910	77,160	15	88,910	7,610	Dec.
		Total Computer Services	**13,685,366**	**11,485,946**	**19**			
		Total Software and Services	**17,837,284**	**14,646,000**	**22**			

* Fiscal year. (R) Restated figures. (E) Estimated figures.
Annual revenues are based on the four quarters ending March 1987 and March 1988. Cognos, Touche Ross, and SHL Systemhouse revenues are in U.S. dollars.

FAST TRACKERS

Company	'88 I/S Revenues (000)	'87 I/S Revenues (000)	Percent Growth
Anacomp Inc.	419,577	110,740	279
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Relational Technology Inc.	*87,400	*46,600	88
On-Line Software Int'l. Inc	84,517	53,434	58
Computer Associates Int'l. Inc.	709,109	452,289	57
Arthur Young & Co.	*204,000	(E)*130,000	57
Interleaf Inc.	58,389	37,173	57
Price Waterhouse & Co.	*152,000	*100,000	52

*(R) Restated; (E) Estimated; * Fiscal year* — *DECISIONS chart*

longer just buying boxes and programming them," he says.

It might also reflect a general dissatisfaction with the performance of corporate Information Services, contends George Shaheen, managing partner for the U.S. Consulting Organizations within Arthur Andersen. "MIS has not been viewed as a great success by [corporate] management," Shaheen offers. Mike Cohn, principal consultant with Input, a Mountain View, CA-based market research firm, concurs. "Too often, MIS has been a day late and a dollar short in getting systems done," he says, citing the common corporate complaint of application backlogs. This has resulted, he concludes, in an "outsourcing of processing" to accommodate mission-critical systems.

The lines of distinction between software and services vendors are blurring.

But many information managers see the use of outside services as a practical, rational approach to the overall downsizing of American businesses. "The demand is for a complete solution," explains Darwin John, vice president of information systems for Scott Paper Co. (Philadelphia) and a member of the DECISIONS Editorial Advisory Board. "I/S has been downsized, yet demand [for I/S services] has not diminished," he says. For that reason, management must "go out to third parties to resource the work." John feels this is good for business because, he says, it allows firms to keep fixed costs down.

Shaheen asserts that his consultants are not meant to usurp the corporate information management function. "We do not compete with MIS internally," he says. "We augment." And AMS's Gross notes that the consultant has to target certain areas. "The more focused your expertise," he says, "the more value you provide."

As software vendors begin eyeing support as a key element in attaining new business as well as keeping old customers, they too are moving more into the realm of services suppliers. Professional services revenues at Hogan Systems Inc. now hover at 50 percent of total revenues; only a few years back, the company's sole revenue producer was its line of banking software. And Boston-based Keane Inc., which ranked 25th on last year's lineup of software companies, now derives 80 percent of its revenues from professional services. While Keane's 1988 revenues grew 16 percent, to better than $47 million, that total wasn't enough to earn it a spot on the top 30 list of services companies.

Input's Cohn points out that 35 percent to 40 percent of software revenues come from maintenance revenues. And most vendors are quick to agree with the statement by Computer Associates' Charles Wang that "support is the most crucial piece of the puzzle." Criticism that Computer Associates has sacrificed support for fast and furious growth is a sore spot for Wang, who says his company aims to improve by observing its competitors. "IBM hand-holds users better than almost anyone," he says. "We're learning that."

Increased emphasis on support helps blur the lines of distinction between software and services vendors. Input's Cohn notes that Oracle, for example, offers a consulting service that now represents 15 percent of the company's revenues. And American Management Systems, the 17th-largest services vendor, currently derives a quarter of its revenues from sales and licenses of software. According to AMS's Gross, the company plans on expanding its software line. Arthur Andersen views its Foundation computer-aided software engineering product line as "a key ingredient" in the company's services ventures, says Shaheen. "It is imperative that Arthur Andersen invest heavily in new technology," he adds.

John Imlay sees no great differentiation between the two sides of the industry. "We are a service business," says Imlay about software vendors in general and MSA in particular. "We're simply a subcontractor to the systems integrators."

If Charles Wang is right, the software and services industry is still an undersaturated marketplace. As evidence, he notes that each existing Computer Associates customer has on average only four of the 70 products in the company's line. That's but one focal point for the company's future growth.

George Shaheen's prognosis is even more bullish: "I don't think we've seen anything yet." D

Laura Daly, a free-lance editor from Maywood, NJ, contributed to this report.

THE DECISIONS/PAINE WEBBER SURVEY

UNIX: JANGLED, MAYBE JINXED

Results of our latest survey indicate that OSF has tripped up Unix—just as Unix had begun gaining momentum. That gives IBM's SAA an opening.

by John Rymer

While IBM, DEC, Hewlett-Packard Co., and four other computer giants celebrated their establishment of the Open Software Foundation as a new beginning for the Unix operating system, corporate users were apparently spooked by the event. Among the 1,170 respondents to the latest quarterly DECISIONS/Paine Webber Survey of MIS Attitudes, 21 percent said they'd delay purchases of Unix-based systems in the wake of OSF.

That's bad news for AT&T and Sun Microsystems Inc., heretofore the leading champions of a broad-based Unix standard. Respondents who said they'd postpone Unix purchases outnumbered those who said they'd stick by AT&T's Unix System V. Support for IBM's Unix variant—AIX—and OSF's nebulous offering based on AIX adds to AT&T's woes (see chart below).

Apparently, the timing of OSF's founding couldn't have been worse for Unix. While respondents to the DECISIONS/Paine Webber surveys are not Unix devotees (46.5 percent cite no interest at all), they had been expressing increasing interest during the last nine months. Unix's importance to information systems planning leaped in the March 1988

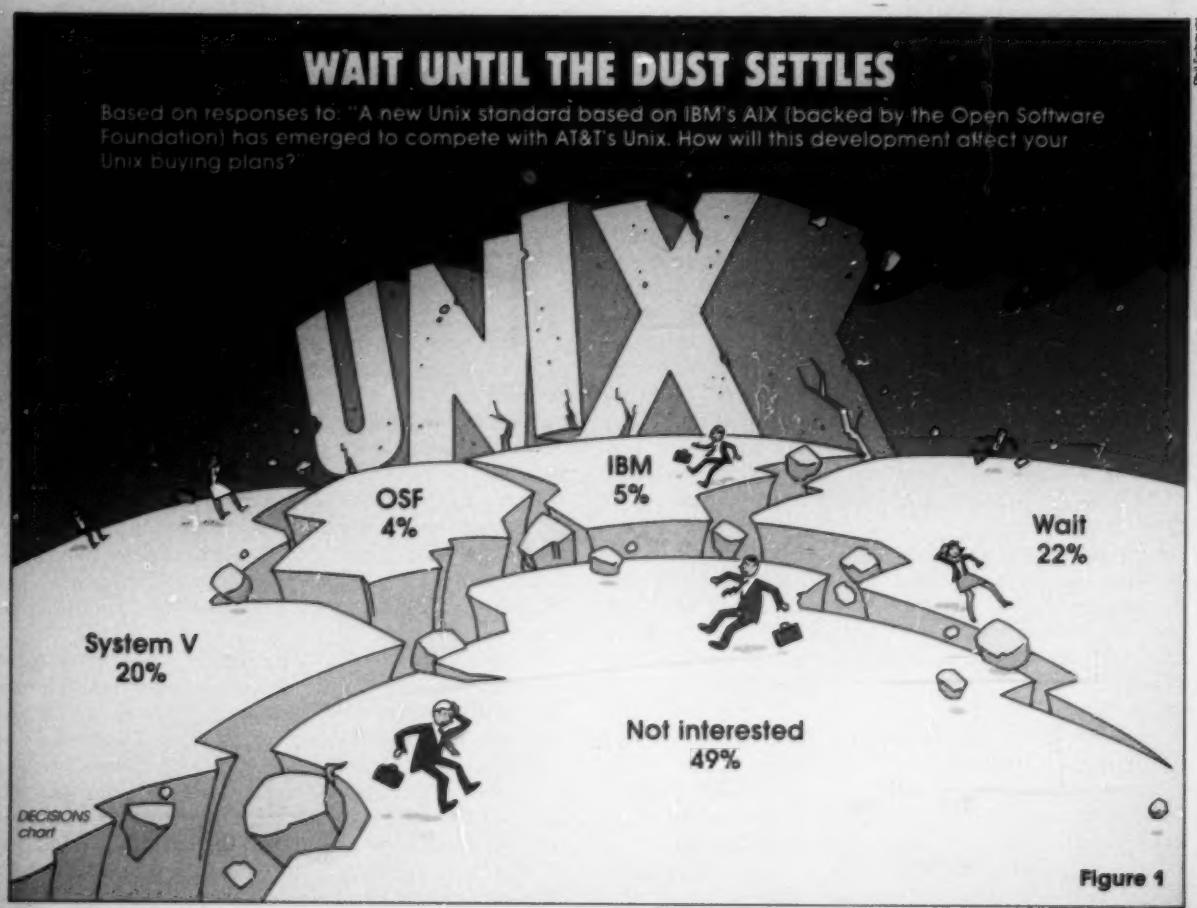

WAIT UNTIL THE DUST SETTLES
Based on responses to: "A new Unix standard based on IBM's AIX (backed by the Open Software Foundation) has emerged to compete with AT&T's Unix. How will this development affect your Unix buying plans?"
UNIX
OSF 4%
IBM 5%
Wait 22%
System V 20%
Not interested 49%
DECISIONS chart
Phil Scheuer

Figure 1

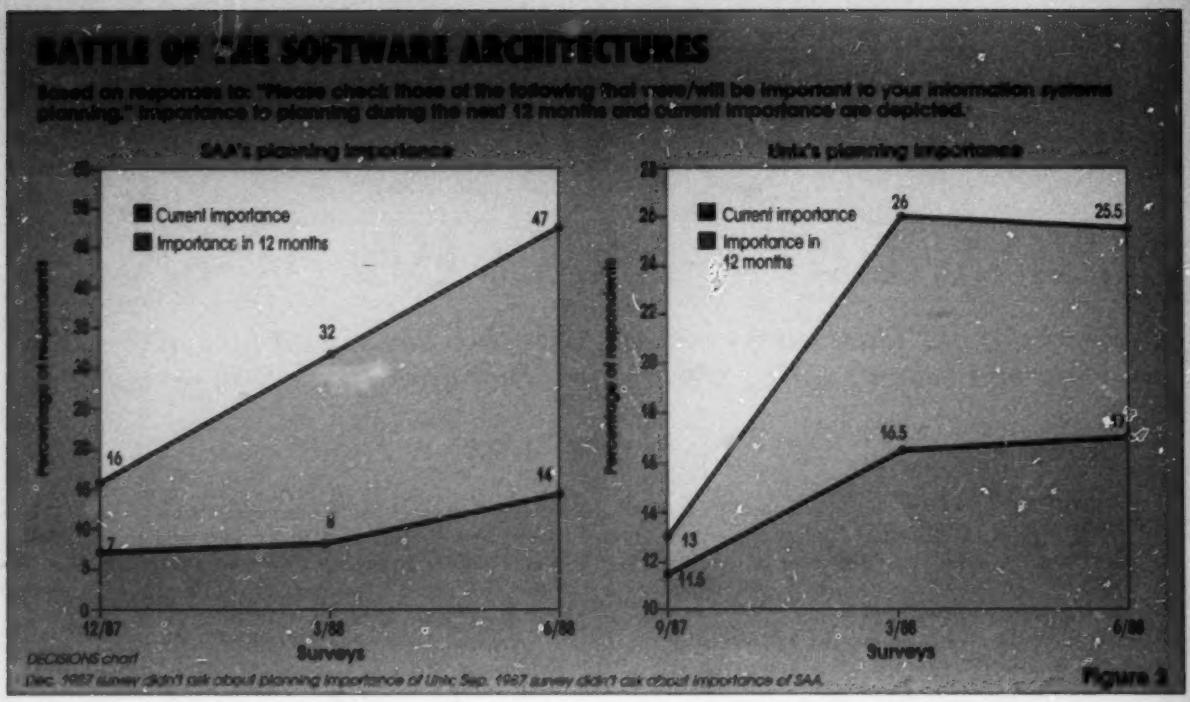


Figure 2

survey, from six months earlier. That interest, while respectable compared with other factors included on the surveys, has flattened for now.

By contrast, IBM's Systems Application Architecture has become a burning concern to respondents. IBM's goal with SAA is to achieve a homogeneous software environment on its three main processor platforms—the Personal System/2, the Application System/400, and the Enterprise System/3090. Homogeneity is also the goal vendors of Unix promote, albeit on computers from a variety of vendors.

SAA, which was announced on St. Patrick's Day in 1987, has finally come into its own, judging from survey responses. SAA and Operating System/2, which in IBM's software spectrum is part of SAA, were named by respondents as the most important factors in their systems planning. Is Unix's apparent dive among respondents a temporary phenomenon? That remains to be seen. Since the survey was taken, AT&T has backed off its initial denials of any interest in OSF. At press time, AT&T officials were hinting that the communications giant might actually join OSF after all, eliminating any split—real or perceived—in the Unix world.

The survey question regarding systems planning factors included a variety of technologies. In order of finish, they are expert systems, electronic data interchange, MS-DOS, optical storage, IBM's Enterprise Systems Architecture, Unix, image processing, and IBM's Advanced Program-to-Program Communications and Micro Channel Architecture.

Interest in OS/2 among survey respondents has been high since we first asked about the operating system in September 1987. When this interest is translated into spending, IBM stands to benefit, as does Microsoft Corp. (Redmond, WA), which codeveloped the operating system. In the latest survey's Vendor Popularity Index, which tracks short-term swings in user opinion, Microsoft registered +31 percent—the highest among software vendors (see chart on next page). In contrast, the popularity rating of Lotus Development Corp. (Cambridge, MA) continued to slide, to −3.5 percent from +3 percent in the previous survey. That means more respondents' opinions of Lotus changed for the worse during the last quarter than changed for the better. The decline may be linked to the slipping release deadline for Version 3 of Lotus 1-2-3. Still, Lotus, like Microsoft, continues to get strong ratings in the survey's Vendor Reputation Index. That index measures long-term satisfaction or dissatisfaction with a vendor.

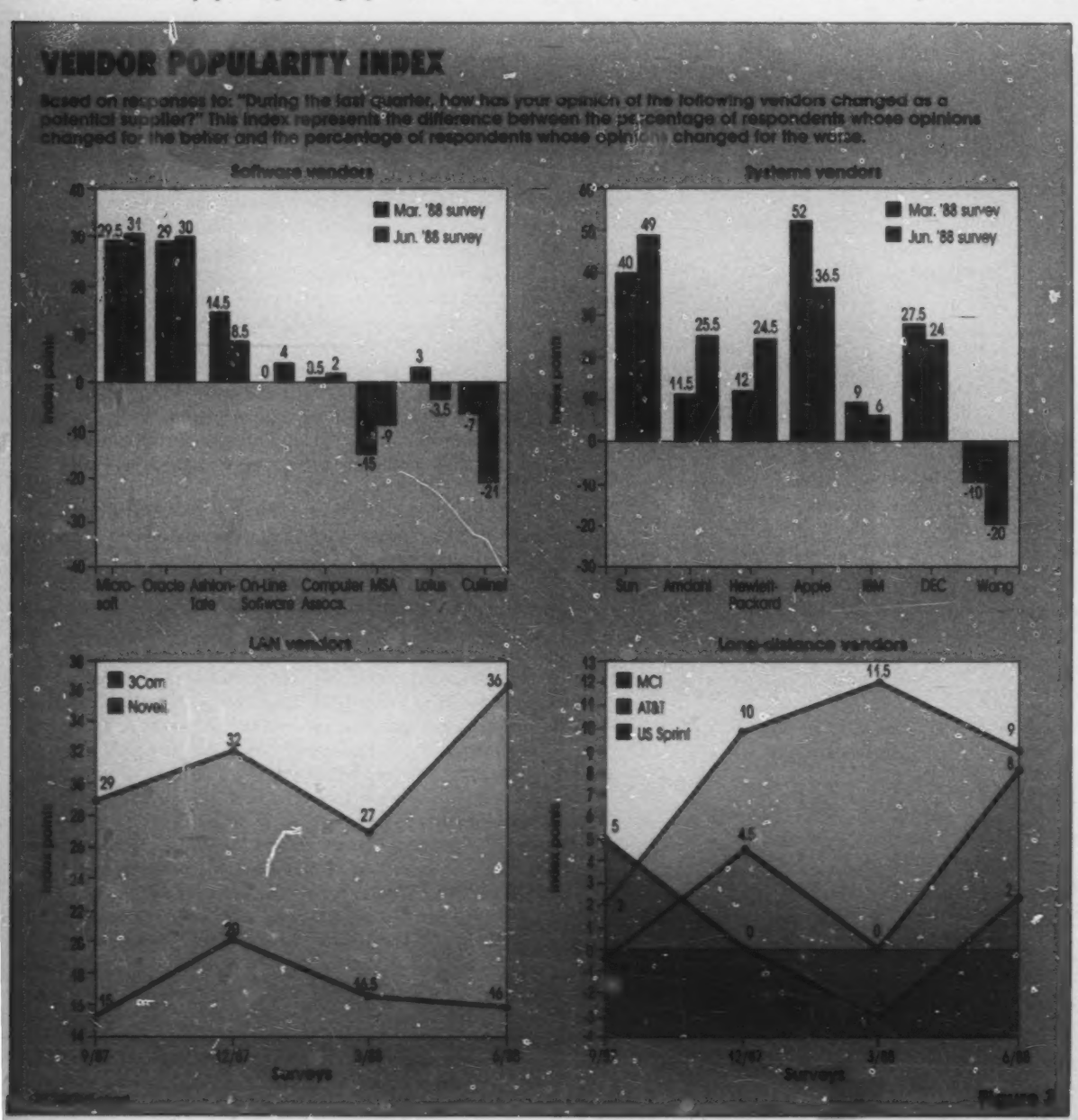
The big gainers in the latest popularity and reputation indexes are Amdahl Corp. (Sunnyvale, CA) and Hewlett-Packard. Both vendors' respective ratings doubled compared with the previous survey. Amdahl's spurt in popularity among survey respondents can be attributed to the aggressive moves that it has been making in the mainframe market. Shortly before the latest survey was mailed, in June, Amdahl announced the industry's first mainframe to operate at 100 million instructions per second. Deliveries of that machine are slated to begin early next year. Since then, IBM has announced the S Series of ES/3090 mainframes, which includes a model that IBM promises will operate at 130 MIPS. Still, Amdahl was able to reach the 100-MIPS plateau first.

Hewlett-Packard's rising popularity can be interpreted as a long-awaited vote of confidence in Spectrum, its ambitious program to remake its computer line using reduced instruction set computing technology. The arrival of what's officially called HP Precision Architecture was years in the making, and respondents to earlier surveys had indicated lukewarm interest in the RISC machines at best. Now, following second-quarter deliveries of a full line of Precision Architecture computers, it appears Hewlett-Packard is getting credit for its efforts.

The biggest decline in the popularity index was registered by Apple Computer Inc. (Cupertino, CA). Apple's latest rating, although a healthy +36.5 percent, was a sharp drop from the all-time survey high (+52 percent) that the micro maker registered in the previous survey. Apple's decline in popularity ratings may signal disapproval among survey respondents of the company's lawsuit against Microsoft and Hewlett-Packard for alleged copyright infringement.

IBM's roller coaster ride continued in the popularity index, dipping to +6 percent after rising to +9 percent in the previous survey from +1.5 percent in the December 1987 survey. If the past is prologue, IBM's June 21 announcement of the Application System/400 midrange line and July 27 unveiling of the ES/3090 S Series will send its popularity rating upward in the next survey. IBM's popularity index rating rose following its announcement of the Personal System/2 (in April 1987) and again after announcement of Enterprise Systems Architecture, an important extension of its mainframe architecture (in February 1988).

For DEC, however, the announcement of new offerings hasn't boosted its popularity ratings. Despite an important freshening last spring of its VAX processor lines (with the VAX 3600, 6200, and 8100) and the addition of important multiprocessor enhancements to the VMS operating system, DEC's popularity index rating in the latest survey continued a long fall from the high of +43 percent that DEC recorded in the initial DECISIONS/Paine Webber survey, taken in March 1987. DEC's rating now stands at +24 percent, which is below the ratings of both Amdahl and Hewlett-Packard. Whether the downward trend will be reversed by DEC's announcement on July 19 of its forth-



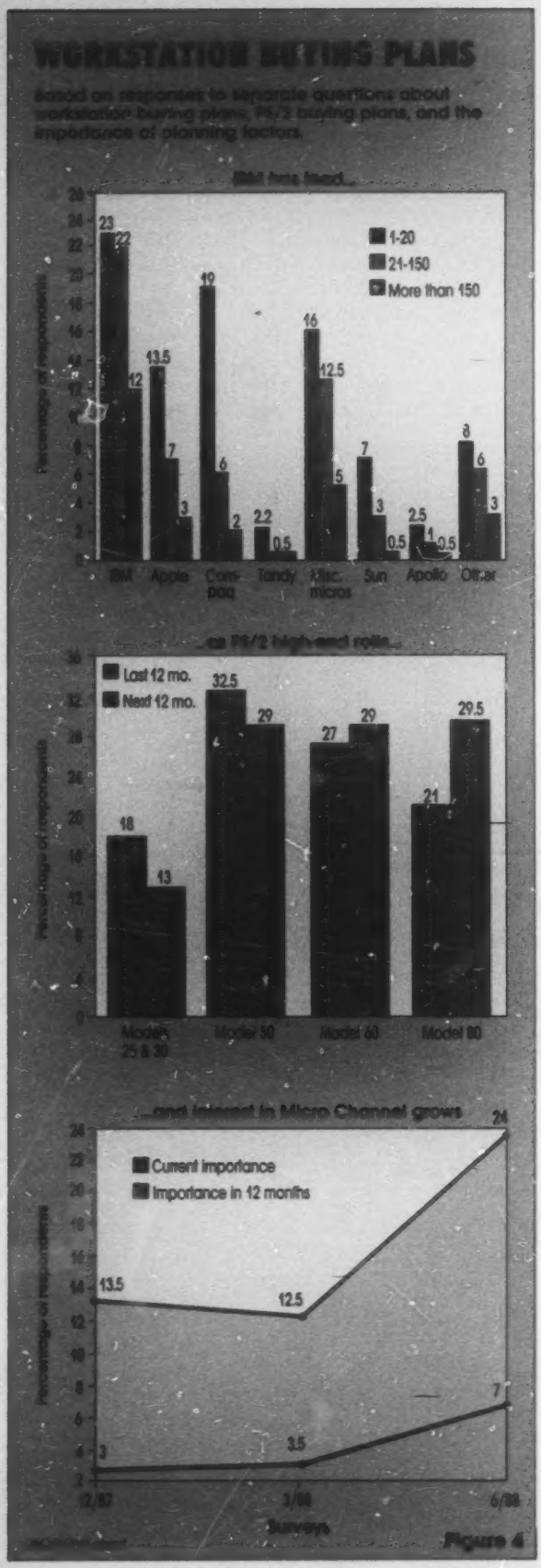


Figure 4

coming DECtp transaction processing offerings remains to be seen.

Although IBM is clearly the vendor of choice for both small- and large-quantity sales of microcomputers among respondents (see chart at left), the latest survey results suggest a flat micro market for IBM in the coming year. Respondents' plans for micro purchasing during the next 12 months don't indicate meaningful increases in market share for IBM. Survey results say the status quo will prevail for the foreseeable future.

Nonetheless, micro purchasing results do hold some good news for IBM: Over the next 12 months, respondents plan to buy more high-end PS/2 models, where IBM's margins are sweeter. At the same time, respondents anticipate reducing purchases of the lower-end PS/2 Models 25, 30, and 50. The biggest gainer in respondents' plans is the Intel 80386-based PS/2 Model 80. Almost 30 percent of respondents said they expect to buy Model 80s during the next 12 months, compared with 21 percent who bought them in the previous year. Most respondents buying the high-end PS/2s plan to buy small quantities, up to 20 units. Few—only 3 percent of respondents for the Model 60 and 2 percent for the Model 80—plan to buy quantities of more than 150. The growth for IBM among respondents will be in purchases of from 21 to 150 units.

Price is apparently an important consideration in corporate purchases of micros. "Miscellaneous PC," a category that includes IBM clones, is the leading source for volume buys, outpacing Compaq Computer Corp. (Houston), the performance leader.

The respectable showing of Sun Microsystems (Mountain View, CA) in micro purchase plans bodes well for Unix sales. Indeed, survey responses suggest that Sun, Apollo Computer Inc. (Chelmsford, MA), and "other" vendors comprise a good measure of the Unix micro and workstation market. Taken on balance, purchasing plans for Unix workstations are strong, compared with DOS and OS/2 machines.

Does this give a glimmer of hope that OSF-related turmoil will be short-lived? The answer may lie in the results of our next survey. **D**

This report covers the sixth quarterly survey, cosponsored by DECISIONS and Paine Webber Inc., the Wall Street brokerage, of information executives and managers. The survey was conducted during the last week of May and the first two weeks of June. Questionnaires were mailed to 10,000 information managers in organizations with 5,000 or more employees; 1,170 responded, a response rate of 11.7 percent. The error rate is plus or minus 2.5 percent. The results of this and all previous surveys were tabulated by SPSS Inc. (Chicago), a statistical software house.

The respondents represent a broad spectrum of industries. The largest group is in manufacturing companies (28 percent), with government (19 percent) and financial services (13 percent) being the next two largest groupings. Excluded from the sample were information managers in organizations whose primary business is the manufacturing and marketing of systems and/or software.

Copies of the full report on the Sixth DECISIONS/Paine Webber Survey of MIS Attitudes are available for $295 from Laurie Schnepf, Marketing Manager, Computer DECISIONS, Glenpointe Centre East, DeGraw Ave., Teaneck, NJ 07666.